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PII: S0376-7388(14)00647-4  
DOI: <http://dx.doi.org/10.1016/j.memsci.2014.08.031>  
Reference: MEMSCI13143

To appear in: *Journal of Membrane Science*

Received date: 15 March 2014  
Revised date: 2 August 2014  
Accepted date: 14 August 2014

Cite this article as: Roland Hilke, Neelakanda Pradeep, Ali Reza Behzad, Suzana P. Nunes, Klaus-Viktor Peinemann, Block Copolymer/Homopolymer Dual-Layer Hollow Fiber Membranes, *Journal of Membrane Science*, <http://dx.doi.org/10.1016/j.memsci.2014.08.031>

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## Block Copolymer/Homopolymer Dual-Layer Hollow Fiber Membranes

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### Abstract:

We manufactured the first time block copolymer dual-layer hollow fiber membranes and dual layer flat sheet membranes manufactured by double solution casting and phase inversion in water. The support porous layer was based on polystyrene and the selective layer with isopores was formed by micelle assembly of polystyrene-*b*-poly-4-vinyl pyridine. The dual layers had an excellent interfacial adhesion and pore interconnectivity. The dual membranes showed pH response behavior like single layer block copolymer membranes with a low flux for pH values less than 3, a fast increase between pH4 and pH6 and a constant high flux level for pH values above 7. The dry/ wet spinning process was optimized to produce dual layer hollow fiber membranes with polystyrene internal support layer and a shell block copolymer selective layer.

Keywords: block copolymer, self-assembly, membrane, dual layer hollow fiber, filtration

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